N60478.AR.001380
NWS EARLE
5090.3a

TRANSMITTAL LETTER FOR THE RESPONSE TO STATE OF NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION COMMENTS ON UNDERGROUND STORAGE TANK PHASE 1 REMEDIAL INVESTIGATION REPORT BUILDING 566 NWS EARLE NJ
12/3/1996
BROWN AND ROOT ENVIRONMENTAL

Brown & Root Environmental

993 Old Eagle School Road, Suite 415
Wayne, PA 19087-1710

(610) 971-0900
FAX: (610) 971-9715

BRPH/51-12-6-5

Project Number 5333

December 3, 1996

Mr. Brian Helland, Code 1812
Senior Environmental Engineer
Northern Division
Naval Facilities Engineering Command
10 Industrial Highway Mailstop 82
Lester, Pennsylvania 19113

Reference: CLEAN Contract No N62472-90-D-1298
Contract Task Order No. 226

Subject: Response To NJDEP Comments
Phase I UST RI Report for Building 566
NWS Earle, Colts Neck, New Jersey

Dear Mr. Helland:

Brown & Root (B&R) Environmental hereby provides the following responses to the New Jersey State Department of Environmental Protection (NJDEP) November 14, 1996 comments on the subject report. The responses are based on our telephone conversation with Mr. Robert Marcolina of November 22, 1996.

General Comment:

NJDEP will not require submission of a revised RI Report. B&R Environmental will provide a detailed response letter (this correspondence), that indicates the NJDEP's comment followed by the response. The Department's primary concern is that continuity remains during information transfers between Navy contractors. The Navy agrees to take necessary action to ensure that responses to NJDEP comments on the RI Report are clearly transferred to other site contractors.

Comment 1:

In B&R Environmental's October 11, 1995 correspondence to you, there was an initial screening of Remedial Action Alternatives which including Bioventing, Biosparging, etc. On Page 2-25 of this report, B&R Environmental recommend that a revised Remedial Action Alternatives should focus only on natural attenuation and free product removal. B&R Environmental should elaborate as to why active remediation of contamination bound in the soil matrix was no longer considered. Any free-product removal alternative should also include investigation of the septic tank (see Comment #3).

Response:

The NJDEP will approve the general remedial action scenario described in the RI Report provided that free-product removal is followed up by soil sampling to determine contaminant concentration in soils within the drainage field. The need to consider active soil remediation alternatives will be evaluated based on the "post-free-product removal" soil sample results.

Comment 2:

In Brown and Root Environmental's June 2, 1995 correspondence to you, there was mention of the presence of a "green liquid" and that a sample of this "green liquid" was taken. What were the analytical results of this green liquid? What proposed actions will be taken since this green liquid was found?

Response:

The analytical results of free-product samples obtained by B&R Environmental are described below. In general, the sample results do not indicate the need to change the remedial scenario described in the RI Report.

The "green liquid" was observed and sampled during B&R Environmental's field investigation performed on May 2nd and 3rd, 1995. The original intent of the field investigation was to delineate the horizontal extent of the soil contamination at and around the septic tank and drainage field. However, site conditions precluded delineation sampling. In particular, several days of rain had occurred just prior to May 2nd, and a leaking water supply line was discovered near the site. The combination of rain and leaking water line flooded the site. B&R Environmental noted saturated soil indicative of shallow groundwater within inches of the surface.

B&R Environmental obtained two samples from the drainage field in areas with obvious signs of free-product. The first sample, designated 566-TCLP-0101, was collected from a seep area at the down-slope side of the drainage field. This sample was identified as dark gray to black sandy clay soil. The second sample, designated 566-US-01, was collected from a small seep of "green liquid" near the southwest corner of the drainage field. This sample was identified as multi-phased, consisting of oil, greenish-gray liquid and gray sediment. Refer to Attachment 1 for a copy of the sample log sheets and field log-book entries for these samples. Refer to Attachment 2 for a copy of the laboratory data sheets.

Sample 566-TCLP-0101 Laboratory Results

Sample 566-TCLP-0101 was analyzed for Toxicity Characteristic Leaching Procedure (TCLP) metals, volatile and semi-volatile organic compounds and pesticides. Volatile, semivolatile organics and pesticides were not detected. The only metals detected were barium, cadmium and mercury. The levels of these metals were all below maximum concentrations for the toxicity characteristic.

Sample 566-US-01 Laboratory Results

The solid and liquid-phase portions of Sample 566-US-01 were analyzed separately. The solid phase was analyzed for target analyte list (TAL) metals, cyanide, and target compound list (TCL) semi-volatile organics plus a library search for 15 tentatively identified compounds (TICs). The liquid phase was analyzed for TAL metals, TCL volatiles plus a library search for 10 TICs and semivolatiles plus 15 TICs. In general, both solid and liquid phase sample results indicate similar compounds that are commonly associated with fuel oil.

Comment 3:

Brown and Root Environmental's October 11, 1995 correspondence included the task of investigating the existing septic tank and possible drainage of that tank if necessary. No mention of this task was included in this report. Please explain.

B&R Environmental's October 11, 1995 correspondence was prepared prior to performing the interim actions. While interviewing the Navy's on-site plumbing maintenance personnel during interim actions, it

was determined that the facility personnel had been pumping the septic tank out on a routine basis. These actions were apparently required due to the leaking water line that continually filled the septic tank.

The RI Report documents this information in the first sentence of the last paragraph on page 1-19.

Comment 4:

In order to control contaminant migration, it is recommended that the Navy implement some type of interim remedial action that would capture the petroleum product emanating from the "seeps" located downgradient form the septic field.

The Navy plans to implement corrective actions (free-product removal) during the spring of 1997. Based on this schedule, the NJDEP will not require additional interim actions at the seep areas.

B&R Environmental trusts that this information adequately addresses the NJDEP's comments. Please do not hesitate to contact me at 610-971-0900, if you have any additional questions.

Sincerely,

Richard J. Gorrell
Project Manager

RJG/dhn

c: Greg Goepfert, NWS Earle
John Trepanowski, P.E., B&R Environmental
Michael Turco, P.E., DEE, B&R Environmental
Russel Turner, B&R Environmental

ATTACHMENT 1

SAMPLE LOG SHEETS AND LOG-BOOK ENTREE FOR FREE PRODUCT SAMPLES

HALLIBURTON NUS
Environmental Corporation

SAMPLE LOG SHEET

Page ____ of ____

- [x] Surface Soil
- [ ] Subsurface Soil
- [ ] Sediment
- [ ] Lagoon / Pond
- [ ] Other ____

Case # ____

By ____

Project Site Name NWS Earle Project Site Number CTO 206

NUS Source No. 566-TCLP-0101 Source Location Building 566

Sample Method: shovel, Trowel	Composite Sample Data		
	Sample	Time	Color / Description
Depth Sampled: 0-12"			
Sample Date & Time: 513195 1330			
Sampled By: John Gee			
Signature(s):			
Type of Sample			
[x] Low Concentration			
[ ] High Concentration			
[x] Grab			
[ ] Composite			
[ ] Grab - Composite			

Sample Data	
Color	Description: (Sand, Clay, Dry; Moist, Wet, etc.)
dark Grey to Black	Sandy Clay with Gravel

Analysis:
TCLP 7
TCLP NV

Observations / Notes

The sample was taken along the oil seep below the septic field

	Organic	Inorganic
Traffic Report #		
Tag #		
AB #		
Date Shipped		
Time Shipped		
Lab		
Volume		

SAMPLE LOG SHEET

Halliburton NUS CORPORATION

Page _____ of _____

- ☐ Spring
- ☐ Lake
- ☐ Stream
- ☐ Lagoon/Pond
- ☐ Other_____

Case No. _____

By _____

Project Site Name NWS Earle Project Site Number CTO 206

HNUS Source No. 566-US-01 Source Location Building 566

Sample Method:	Composite Sample Data		
8 oz Glass Jar	Sample	Time	Color/Description
Depth Sampled:			
8-12"			
Sample Date & Time:			
5/3/95 1340			
Sampled By:			
John Gee			
Signature(s):			
Type of Sample			
☐ Low Concentration			
☑ High Concentration			
☑ Grab			
☐ Composite			
☐ Grab - Composite			

Sample Data	
Color	Description: (Sand, Clay, Dry, Moist, Wet, etc)
Grey Green	Liquid from Septic System

Analysis:	Observation/Notes
Full TCL TAL	The sample was a greyish green with three phases. A floating layer of oil a grey green liquid and a grey sediment

	Organic	Inorganic
Traffic Report No.		
Tag No.		
AB No.		
Date Shipped		
Time Shipped		
Laboratory		
Volume		

"Rite in the Rain"®

ALL-WEATHER

FIELD

Notebook No. 351

CTO-206-Bldg 566

P-212

Second Round Auger

Sampling Septic System

MAY, JUNE, JULY 1995

fine grained and dry at depth. The sample was taken at 42 to 48 inches because of the drastic color change.

1330 Sample Location 566-TCLP-0101 was collected by John Gee at a depth of 1 foot for TCLP E and TCLP NV analysis only. The sample was a dark grey to black sandy clay with gravel mixed in and it was very moist. The sample was optomed from the scap along the lower end of the tile field.

1410 Sample Location 566-RB-0503 was collected by John Gee from water obtained from Lancaster Laboratory and was run over a previously dicened. trowel. The samples were analyzed for VOA an TCLP-F only.

1430 Sample Location 566-FB-0503 was collected by John Gee by pouring deion water brought from the office the previous day into the appropriate bottles. The analysis was run for Volatiles and TCLP F.

1340 sample Location P-1 was collected by John Gee at a depth of 8". The sample was Pure Product and a greenish liquid. The sample will be brought back to the office and sent out at a later date.

1530 The log book is turned over to John Gee to begin surveying in points.

JG

ATTACHMENT 2

SAMPLE LABORATORY DATA SHEETS FOR FREE PRODUCT SAMPLES

7558
2306837-8

Halliburton.

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTO 206	SITE NAME: NWS Earle
SAMPLERS (SIGNATURE): [signature]	

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CON-TAINERS	40 ML Unpreserved Full TCL TAL	1 Liter Amber Full TCL TAL					REMARKS
566	5/3/95	1340		✓	566-US-01	3	2	1					Medium Hazard oil Layer present with Liquid phase and a solid phase. Seven day Turn Around Time needed.

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
[signature]	5/4/95 1800				
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED FOR LABORATORY BY (SIGNATURE): [signature]	DATE / TIME: 5/5/95 0945	REMARKS: Shipped via Federal Express Airbill No 347959095	

Order No. 70440 (0693)

Lancaster Laboratories
Where quality is a science.

LLI Sample No. G4 2306837
Collected: 5/ 3/95 at 13:40 by CM

Submitted: 5/ 5/95 Reported: 5/25/95
Discard: 7/25/95

566-US-01 Grab Oil Sample

NWS Earle CTO-206
US010 SDG#: NWS04-01

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#15-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS	
1643	Aluminum	see form 1	58.	attached	
1644	Antimony	see form 1	39.	attached	
1646	Barium	see form 1	19.	attached	
1647	Beryllium	see form 1	1.0	attached	
1649	Cadmium	see form 1	3.9	attached	
1651	Chromium	see form 1	7.8	attached	
1652	Cobalt	see form 1	9.7	attached	
1653	Copper	see form 1	7.8	attached	
1654	Iron	see form 1	20.	attached	
1658	Manganese	see form 1	3.9	attached	
1661	Nickel	see form 1	9.7	attached	
1662	Potassium	see form 1	97.	attached	
1666	Silver	see form 1	3.9	attached	
1671	Vanadium	see form 1	3.9	attached	
1672	Zinc	see form 1	19.	attached	
4841	Form I - Inorganics			See Page	2
0150	Calcium	see form 1	60.	attached	
0157	Magnesium	see form 1	50.	attached	
0159	Mercury	see form 1	0.100	attached	
0167	Sodium	see form 1	100.	attached	
1145	Arsenic (furnace method)	see form 1	2.0	attached	
1155	Lead (furnace method)	see form 1	1.0	attached	
1164	Selenium (furnace method)	see form 1	1.0	attached	
1173	Thallium (furnace method)	see form 1	2.0	attached	
0893	Semivolatile Library Search			See Page	3
	The results from the semivolatile library search are listed on the attached FORM 1F - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form. An "X" indicates an isomer of the listed compound.				
1422	CLP Form I - Semi-volatiles			See Page	4
4438	TCL Semi-Volatiles (3/90 SOW)	see form 1			
4439	TCL Semi-Volatiles (3/90) cont	see form 1			
5895	Total Cyanide (solid)	N.D.	0.1	mg/kg	
	The usual quantitation limits could not be attained due to the matrix of the sample or interferences observed in the GC/MS semivolatile analysis.				

1 COPY TO Halliburton NUS ATTN: Ms. Jill Hartnell
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300
11:18:24 D 0002 2 121259 464841
944 15.00 00141888 ASR000

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
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umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
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X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

Tests results relate only to the sample tested. Clients should be aware that a critical step in a chemical or microbiological analysis is the collection of the sample. Unless the sample analyzed is truly representative of the bulk of material involved, the test results will be meaningless. If you have questions regarding the proper techniques of collecting samples, please contact us. We cannot be held responsible for sample integrity, however, unless sampling has been performed by a member of our staff. This report shall not be reproduced except in full, without the written approval of the laboratory.

WARRANTY AND LIMITATION OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. We disclaim any other warranties, express or implied, including a Warranty of Fitness for Particular Purpose and Warranty of Merchantability. We accept no responsibility for the purpose for which the client uses the test results. No purchase order or other order for work shall be accepted by the company with any conditions that vary from our Standard Terms and Conditions. If Lancaster Laboratories performs work requested by the client, conditions at variance to our Standard Terms and Conditions are not part of the contract.

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QUALITY ASSURANCE SUMMARY

CLIENT SAMPLE NO.

INORGANIC ANALYSIS DATA SHEET
FORM I

US010

ab Name: LANCASTER_LABORATORIES___
DG No.: NWS04
atrix (soil/water): _OIL_ Lab Sample ID: 2306837
evel (low/med): LOW Date Received: 05/05/95
Solids: 100.0

Concentration Units (ug/L or mg/kg dry weight): MG/KG__

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	19.2	U		P
7440-36-0	Antimony	2.1	B	N	P
7440-38-2	Arsenic	0.21	U	WN	F
7440-39-3	Barium	1.5	B		P
7440-41-7	Beryllium	0.19	U		P
7440-43-9	Cadmium	0.68	U		P
7440-70-2	Calcium	8.1	U		A
7440-47-3	Chromium	1.8	U		P
7440-48-4	Cobalt	1.2	U		P
7440-50-8	Copper	3.4	B		P
7439-89-6	Iron	29.7	B		P
7439-92-1	Lead	0.088	U	N	F
7439-95-4	Magnesium	4.3	B		A
7439-96-5	Manganese	1.3	B		P
7439-97-6	Mercury	0.016	U		CV
7440-02-0	Nickel	1.4	U		P
7440-09-7	Potassium	36.8	U		P
7782-49-2	Selenium	0.095	U	WN	F
7440-22-4	Silver	1.1	U		P
7440-23-5	Sodium	26.8	U		A
7440-28-0	Thallium	0.23	U		F
7440-62-2	Vanadium	0.74	U		P
7440-66-6	Zinc	10.3	B		P

olor Before: _____ Clarity Before: _____ Texture: _____
olor After: _____ Clarity After: _____ Artifacts: _____
omments:

_____
_____
_____
_____

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

Respectfully Submitted
Ramona V. Layman, Group Leader
ICP Metals/Leachates

See reverse side for explanation of symbols and abbreviations.

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
US010

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) SOIL Lab Sample ID: 2306837
Sample wt/vol: 1 (g/mL) G Lab File ID: >R2022
Level: (low/med) MED Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N)___. Date Extracted: 05/08/95
Concentrated Extract Volume: 1000 (uL) Date Analyzed: 05/10/95
Injection Volume: 2.0 (uL) Dilution Factor: 5.0
GPC Cleanup: (Y/N) Y pH: _____.

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/KG

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown	10.26	3900000.	J N
2.		Unknown	12.03	3200000.	J N
3.		Unknown	12.93	2300000.	J N
4.		Unknown alkane	13.65	4300000.	J N
5.		Unknown alkane	13.85	2500000.	J N
6.		Unknown alkane	14.73	2800000.	J N
7.		Unknown alkane	15.15	4900000.	J N
8.	90120	Naphthalene, 1-methyl-	15.75	2600000.	J N
9.		Unknown alkane	16.55	5100000.	J N
10.		Naphthalene, 1,3-dimethyl-	17.04	2600000.	XJ N
11.		Unknown alkane	17.38	2300000.	J N
12.		Unknown	17.87	4900000.	J N
13.		Naphthalene, 1,4,6-trimethyl	18.71	2400000.	XJ N
14.		Naphthalene, 1,4,6-trimethyl	18.93	2600000.	XJ N
15.		Unknown alkane	19.12	4700000.	J N
16.		Unknown alkane	19.68	4800000.	J N
17.		Unknown alkane	20.29	3800000.	J N
18.		Unknown alkane	21.40	3500000.	J N
19.		Unknown alkane	22.45	3800000.	J N
20.		Unknown	23.46	3400000.	J N

FORM 1 SV-TIC 3/90

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
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Lancaster Laboratories
Where quality is a science.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

US010

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) SOIL Lab Sample ID: 2306837
Sample wt/vol: 1 (g/mL) G Lab File ID: >R2022
Level: (low/med) MED Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/10/95
Injection Volume: 2.0 (uL) Dilution Factor: 5.0
GPC Cleanup: (Y/N) Y pH: _____.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	100000	U
111-44-4	bis(2-Chloroethyl)ether	100000	U
95-57-8	2-Chlorophenol	100000	U
541-73-1	1,3-Dichlorobenzene	100000	U
106-46-7	1,4-Dichlorobenzene	100000	U
95-50-1	1,2-Dichlorobenzene	100000	U
95-48-7	2-Methylphenol	100000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	100000	U
106-44-5	4-Methylphenol	100000	U
621-64-7	N-Nitroso-di-n-propylamine	100000	U
67-72-1	Hexachloroethane	100000	U
98-95-3	Nitrobenzene	100000	U
78-59-1	Isophorone	100000	U
88-75-5	2-Nitrophenol	100000	U
105-67-9	2,4-Dimethylphenol	100000	U
111-91-1	bis(2-Chloroethoxy)methane	100000	U
120-83-2	2,4-Dichlorophenol	100000	U
120-82-1	1,2,4-Trichlorobenzene	100000	U
91-20-3	Naphthalene	680000	
106-47-8	4-Chloroaniline	100000	U
87-68-3	Hexachlorobutadiene	100000	U
59-50-7	4-Chloro-3-methylphenol	100000	U
91-57-6	2-Methylnaphthalene	2300000	E
77-47-4	Hexachlorocyclopentadiene	100000	U
88-06-2	2,4,6-Trichlorophenol	100000	U
95-95-4	2,4,5-Trichlorophenol	250000	U
91-58-7	2-Chloronaphthalene	100000	U
88-74-4	2-Nitroaniline	250000	U
131-11-3	Dimethylphthalate	100000	U
606-20-2	2,6-Dinitrotoluene	100000	U
208-96-8	Acenaphthylene	73000	J
99-09-2	3-Nitroaniline	250000	U
83-32-9	Acenaphthene	350000	

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

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717-656-2301 Fax: 717-656-2681

See reverse side for explanation of symbols and abbreviations.

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N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
US010DL

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) SOIL Lab Sample ID: 2306837DL
Sample wt/vol: 1 (g/mL) G Lab File ID: >I2050
Level: (low/med) MED Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/11/95
Injection Volume: 2.0 (uL) Dilution Factor: 50.0
GPC Cleanup: (Y/N) Y pH: _____.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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98-95-3	Nitrobenzene	1000000	U
78-59-1	Isophorone	1000000	U
88-75-5	2-Nitrophenol	1000000	U
105-67-9	2,4-Dimethylphenol	1000000	U
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120-83-2	2,4-Dichlorophenol	1000000	U
120-82-1	1,2,4-Trichlorobenzene	1000000	U
91-20-3	Naphthalene	790000	J D
106-47-8	4-Chloroaniline	1000000	U
87-68-3	Hexachlorobutadiene	1000000	U
59-50-7	4-Chloro-3-methylphenol	1000000	U
91-57-6	2-Methylnaphthalene	4200000	D
77-47-4	Hexachlorocyclopentadiene	1000000	U
88-06-2	2,4,6-Trichlorophenol	1000000	U
95-95-4	2,4,5-Trichlorophenol	2500000	U
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88-74-4	2-Nitroaniline	2500000	U
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606-20-2	2,6-Dinitrotoluene	1000000	U
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99-09-2	3-Nitroaniline	2500000	U
83-32-9	Acenaphthene	380000	J D

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Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
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US010

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) SOIL Lab Sample ID: 2306837
Sample wt/vol: 1 (g/mL) G Lab File ID: >R2022
Level: (low/med) MED Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/10/95
Injection Volume: 2.0 (uL) Dilution Factor: 5.0
GPC Cleanup: (Y/N) Y pH: _____.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
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100-02-7	4-Nitrophenol	250000	U
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121-14-2	2,4-Dinitrotoluene	100000	U
84-66-2	Diethylphthalate	100000	U
7005-72-3	4-Chlorophenyl-phenylether	100000	U
86-73-7	Fluorene	100000	U
100-01-6	4-Nitroaniline	250000	U
534-52-1	4,6-Dinitro-2-methylphenol	250000	U
86-30-6	N-Nitrosodiphenylamine (1)	100000	U
101-55-3	4-Bromophenyl-phenylether	100000	U
118-74-1	Hexachlorobenzene	100000	U
87-86-5	Pentachlorophenol	250000	U
85-01-8	Phenanthrene	910000	E
120-12-7	Anthracene	140000	
86-74-8	Carbazole	100000	U
84-74-2	Di-n-butylphthalate	100000	U
206-44-0	Fluoranthene	67000	J
129-00-0	Pyrene	120000	
85-68-7	Butylbenzylphthalate	100000	U
91-94-1	3,3'-Dichlorobenzidine	100000	U
56-55-3	Benzo(a)anthracene	33000	J
117-81-7	bis(2-Ethylhexyl)phthalate	100000	U
218-01-9	Chrysene	56000	J
117-84-0	Di-n-octylphthalate	100000	U
205-99-2	Benzo(b)fluoranthene	15000	J
207-08-9	Benzo(k)fluoranthene	100000	U
50-32-8	Benzo(a)pyrene	29000	J
193-39-5	Indeno(1,2,3-cd)pyrene	10000	J
53-70-3	Dibenz(a,h)anthracene	100000	U
191-24-2	Benzo(g,h,i)perylene	14000	J

(1) - Cannot be separated from Diphenylamine

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

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Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) SOIL Lab Sample ID: 2306837DL
Sample wt/vol: 1 (g/mL) G Lab File ID: >I2050
Level: (low/med) MED Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 1000(uL) Date Analyzed: 05/11/95
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118-74-1	Hexachlorobenzene	1000000	U
87-86-5	Pentachlorophenol	2500000	U
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120-12-7	Anthracene	150000	J D
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53-70-3	Dibenz(a,h)anthracene	1000000	U
191-24-2	Benzo(g,h,i)perylene	1000000	U

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FORM I SV-2 3/90

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

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LABORATORY CHRONICLE

LLI Sample No. G4 2306837
Collected: 05/03/95 at 13:40 by CM

Submitted: 05/05/95

566-US-01 Grab Oil Sample

NWS Earle CTO-206
US010 SDG#: NWS04-01

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

CAT NO	ANALYSIS NAME	METHOD	TRIAL	DATE OF ANALYSIS	ANALYST
1643	Aluminum	SW-846 6010A	1	05/08/95	DJH
1644	Antimony	SW-846 6010A	1	05/08/95	DJH
1646	Barium	SW-846 6010A	1	05/08/95	DJH
1647	Beryllium	SW-846 6010A	1	05/08/95	DJH
1649	Cadmium	SW-846 6010A	1	05/08/95	DJH
1651	Chromium	SW-846 6010A	1	05/08/95	DJH
1652	Cobalt	SW-846 6010A	1	05/08/95	DJH
1653	Copper	SW-846 6010A	1	05/08/95	DJH
1654	Iron	SW-846 6010A	1	05/08/95	DJH
1658	Manganese	SW-846 6010A	1	05/08/95	DJH
1661	Nickel	SW-846 6010A	1	05/08/95	DJH
1662	Potassium	SW-846 6010A	1	05/08/95	DJH
1666	Silver	SW-846 6010A	1	05/08/95	DJH
1671	Vanadium	SW-846 6010A	1	05/08/95	DJH
1672	Zinc	SW-846 6010A	1	05/08/95	DJH
1850	Ol Metals Digestion for Oils	SW-846 3050 (Modified)	1	05/06/95	JG
0150	Calcium	SW-846 7140	1	05/12/95	DSV
0157	Magnesium	SW-846 7450	1	05/12/95	DSV
0159	Mercury	SW-846 7471	1	05/08/95	MSM
0167	Sodium	SW-846 7770 (Modified)	1	05/10/95	DSV
1015	Ol Metals Digestion for Oils	SW-846 3050A (Modified)	1	05/08/95	JG
1145	Arsenic (furnace method)	SW-846 7060	1	05/09/95	JMS
1155	Lead (furnace method)	SW-846 7421	1	05/09/95	RDG
1164	Selenium (furnace method)	SW-846 7740	1	05/09/95	RDG
1173	Thallium (furnace method)	SW-846 7841	1	05/10/95	MST
5711	SW SW846 Hg Digest	SW-846 7471	1	05/08/95	RKF
4438	TCL Semi-Volatiles (3/90 SOW)	SOW OLM01.8 3/90	1	05/10/95	BAR
4439	TCL Semi-Volatiles (3/90) cont	SOW OLM01.8 3/90	1	05/10/95	BAR
4607	TCL 3/90 Soil Extraction	SOW OLM01.8 3/90	1	05/08/95	JF
5895	Total Cyanide (solid)	SW-846 9012	1	05/12/95	DMB
5896	Cyanide Solid Distillation	SW-846 9012	1	05/12/95	VMM

Explanation of Symbols and Abbreviations

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TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

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Lancaster Laboratories
Where quality is a science.

LLI Sample No. WW 2306838
Collected: 5/ 3/95 at 13:40 by CM

Submitted: 5/ 5/95 Reported: 5/25/95
Discard: 7/25/95

566-US-01 Grab Water Sample

NWS Earle CTO-206
US01W SDG#: NWS04-02*

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#15-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS	
0890	VOA GC/MS Library Search			See Page	3
	The results from the volatile library search are listed on the attached FORM 1E - VOA-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form.				
1421	CLP Form I - VOA's			See Page	4
4275	TCL Volatiles (EPA 3/90 SOW)	see form 1			
1743	Aluminum	see form 1	0.20	attached	
1744	Antimony	see form 1	0.060	attached	
1746	Barium	see form 1	0.20	attached	
1747	Beryllium	see form 1	0.0050	attached	
1749	Cadmium	see form 1	0.0050	attached	
1750	Calcium	see form 1	5.0	attached	
1751	Chromium	see form 1	0.010	attached	
1752	Cobalt	see form 1	0.050	attached	
1753	Copper	see form 1	0.025	attached	
1754	Iron	see form 1	0.10	attached	
1757	Magnesium	see form 1	5.0	attached	
1758	Manganese	see form 1	0.015	attached	
1761	Nickel	see form 1	0.040	attached	
1762	Potassium	see form 1	5.0	attached	
1766	Silver	see form 1	0.010	attached	
1767	Sodium	see form 1	5.0	attached	
1771	Vanadium	see form 1	0.050	attached	
1772	Zinc	see form 1	0.020	attached	
4841	Form I - Inorganics			See Page	6
7022	Thallium TR	see form 1	0.010	attached	
7035	Arsenic TR	see form 1	0.010	attached	
7036	Selenium TR	see form 1	0.0050	attached	
7055	Lead TR	see form 1	0.0030	attached	
0259	Mercury	see form 1	0.0020	attached	
0893	Semivolatile Library Search			See Page	7
	The results from the semivolatile library search are listed on the attached FORM 1F - SV-TIC. The qualifiers appearing in the "Q" column are defined on the back of this form. An "X" indicates an isomer of the listed compound.				
1422	CLP Form I - Semi-volatiles			See Page	8
4372	TCL Semi-Volatiles (3/90 SOW)	see form 1			
4373	TCL Semi-Volatiles 3/90 (cont)	see form 1			

1 COPY TO Halliburton NUS ATTN: Ms. Jill Hartnell
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300
11:21:19 D 0002 2 121259 464841
944 1496.88 00149688 ASR000

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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566-US-01 Grab Water Sample

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Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#15-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS

The usual quantitation limits could not be attained due to the matrix of the sample or interferences observed in the GC/MS semivolatile analysis.

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

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Lancaster Laboratories
Where quality is a science.

1E

EPA SAMPLE NO.

USO1W

VOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

Lab Name: LANCASTER LABS Contract: _____
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838
Sample wt/vol: 5.0 (g/mL) ML Lab File ID: >HYA10
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: not dec. _____ Date Analyzed: 05/10/95
GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

Number TICs found: 10

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	3073663	Cyclohexane, 1,1,3-trimethyl	14.88	84.	J N
2.		Unknown alkane	15.23	120.	J N
3.		Unknown	16.91	200.	J N
4.		Unknown alkane	17.43	92.	J N
5.		C9H12 aromatic	17.80	410.	J N
6.	124185	Decane	17.94	740.	J N
7.		C9H12 aromatic	18.22	220.	J N
8.	2847725	Decane, 4-methyl-	18.38	89.	J N
9.		C9H12 aromatic	18.47	540.	J N
10.		C10H14 aromatic	18.72	120.	J N
11.					
12.					
13.					
14.					
15.					
16.					
17.					
18.					
19.					
20.					
21.					
22.					
23.					
24.					
25.					

FORM I VOA-TIC

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

See reverse side for explanation of symbols and abbreviations.

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VOLATILE ORGANICS ANALYSIS DATA SHEET

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USO1W

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GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 1.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	10	U
75-01-4	Vinyl Chloride	10	U
74-83-9	Bromomethane	10	U
75-00-3	Chloroethane	10	U
75-35-4	1,1-Dichloroethene	10	U
67-64-1	Acetone	120	
75-15-0	Carbon Disulfide	10	U
75-09-2	Methylene Chloride	10	U
75-34-3	1,1-Dichloroethane	10	U
540-59-0	1,2-Dichloroethene (total)	10	U
78-93-3	2-Butanone	41	
67-66-3	Chloroform	10	U
107-06-2	1,2-Dichloroethane	10	U
71-55-6	1,1,1-Trichloroethane	10	U
56-23-5	Carbon Tetrachloride	10	U
71-43-2	Benzene	8	J
79-01-6	Trichloroethene	10	U
78-87-5	1,2-Dichloropropane	10	U
75-27-4	Bromodichloromethane	10	U
10061-01-5	cis-1,3-Dichloropropene	10	U
10061-02-6	trans-1,3-Dichloropropene	10	U
79-00-5	1,1,2-Trichloroethane	10	U
124-48-1	Dibromochloromethane	10	U
75-25-2	Bromoform	10	U
108-10-1	4-Methyl-2-Pentanone	10	U
108-88-3	Toluene	79	
127-18-4	Tetrachloroethene	10	U
591-78-6	2-Hexanone	10	U
108-90-7	Chlorobenzene	10	U
100-41-4	Ethylbenzene	73	
1330-20-7	Xylene (total)	610	E
100-42-5	Styrene	10	U
79-34-5	1,1,2,2-Tetrachloroethane	10	U

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

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N	Presumptive evidence of a compound (TIC's only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
USO1WDL

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838
Sample wt/vol: 5.0 (g/mL) ML Lab File ID: >HYA09
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: not dec. _____ Date Analyzed: 05/10/95
GC Column: DB624 ID: 0.53 (mm) Dilution Factor: 2.0
Soil Extract Volume: _____ (uL) Soil Aliquot Volume: _____ (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	20	U
75-01-4	Vinyl Chloride	20	U
74-83-9	Bromomethane	20	U
75-00-3	Chloroethane	20	U
75-35-4	1,1-Dichloroethene	20	U
67-64-1	Acetone	120	D
75-15-0	Carbon Disulfide	20	U
75-09-2	Methylene Chloride	20	U
75-34-3	1,1-Dichloroethane	20	U
540-59-0	1,2-Dichloroethene (total)	20	U
78-93-3	2-Butanone	40	D
67-66-3	Chloroform	20	U
107-06-2	1,2-Dichloroethane	20	U
71-55-6	1,1,1-Trichloroethane	20	U
56-23-5	Carbon Tetrachloride	20	U
71-43-2	Benzene	9	J D
79-01-6	Trichloroethene	20	U
78-87-5	1,2-Dichloropropane	20	U
75-27-4	Bromodichloromethane	20	U
10061-01-5	cis-1,3-Dichloropropene	20	U
10061-02-6	trans-1,3-Dichloropropene	20	U
79-00-5	1,1,2-Trichloroethane	20	U
124-48-1	Dibromochloromethane	20	U
75-25-2	Bromoform	20	U
108-10-1	4-Methyl-2-Pentanone	20	U
108-88-3	Toluene	92	D
127-18-4	Tetrachloroethene	20	U
591-78-6	2-Hexanone	20	U
108-90-7	Chlorobenzene	20	U
100-41-4	Ethylbenzene	85	D
1330-20-7	Xylene (total)	790	D
100-42-5	Styrene	20	U
79-34-5	1,1,2,2-Tetrachloroethane	20	U

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

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2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

See reverse side for explanation of symbols and abbreviations.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
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umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
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meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

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ppb parts per billion

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1

INORGANIC ANALYSIS DATA SHEET

EPA SAMPLE NO.

USO1W

ab Name: LANCASTER_LABORATORIES___ Contract: _____
ab Code: _____ Case No.: _____ SAS No.: _____ SDG No.: NWS04
atrix (soil/water): WATER Lab Sample ID: 2306838
evel (low/med): LOW Date Received: 05/05/95
Solids: 0.0

Concentration Units (ug/L or mg/kg dry weight): UG/L___

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	28900			P
7440-36-0	Antimony	2.5	U		P
7440-38-2	Arsenic	13.1			P
7440-39-3	Barium	87.0	B		P
7440-41-7	Beryllium	0.70	B		P
7440-43-9	Cadmium	1.2	B		P
7440-70-2	Calcium	133000			P
7440-47-3	Chromium	142			P
7440-48-4	Cobalt	5.4	B		P
7440-50-8	Copper	86.6			P
7439-89-6	Iron	71500			P
7439-92-1	Lead	122			P
7439-95-4	Magnesium	20600			P
7439-96-5	Manganese	719			P
7439-97-6	Mercury	2.5			CV
7440-02-0	Nickel	12.6	B		P
7440-09-7	Potassium	12100			P
7782-49-2	Selenium	4.9	B		P
7440-22-4	Silver	1.6	B		P
7440-23-5	Sodium	22200			P
7440-28-0	Thallium	5.0	B		P
7440-62-2	Vanadium	128			P
7440-66-6	Zinc	106		E	P

olor Before: BROWN_____ Clarity Before: OPAQUE____ Texture: _____
olor After: BROWN_____ Clarity After: OPAQUE____ Artifacts: _____
omments: The reported value for zinc is estimated due to the presence
E interference._____

Respectfully Submitted
Ramona V. Layman, Group Leader
ICP Metals/Leachates

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PO Box 12425
Lancaster, PA 17605-2425
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ml	milliliter(s)	**ul**	microliter(s)
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
USO1W

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838
Sample wt/vol: 950 (g/mL) ML Lab File ID: >I1810
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N)___. Date Extracted: 05/08/95
Concentrated Extract Volume: 10000 (uL) Date Analyzed: 05/09/95
Injection Volume: 2.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) N pH: _____.

Number TICs found: 20

CONCENTRATION UNITS:
(ug/L or ug/Kg) UG/L

	CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.		Unknown alkane	10.25	28000.	J N
2.		Unknown alkane	12.02	24000.	J N
3.		Unknown alkane	13.63	34000.	J N
4.		Unknown alkane	14.73	21000.	J N
5.		Unknown alkane	15.14	38000.	J N
6.	90120	Naphthalene, 1-methyl-	15.74	24000.	J N
7.		Unknown	16.54	46000.	J N
8.		Naphthalene, 1,7-dimethyl-	17.03	21000.	XJ N
9.		Unknown alkane	17.36	18000.	J N
10.		Unknown alkane	17.86	42000.	J N
11.		Naphthalene, 1,4,6-trimethyl	18.69	20000.	XJ N
12.		Naphthalene, 1,4,6-trimethyl	18.91	22000.	XJ N
13.		Unknown alkane	19.11	37000.	J N
14.		Unknown alkane	19.67	38000.	J N
15.		Unknown alkane	20.28	32000.	J N
16.		Unknown alkane	20.34	18000.	J N
17.		Unknown alkane	21.38	29000.	J N
18.		Unknown	22.44	26000.	J N
19.		Unknown alkane	23.44	27000.	J N
20.		Unknown alkane	24.37	18000.	J N

FORM 1 SV-TIC 3/90

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

MEMBER ACIL
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PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
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EPA SAMPLE NO.

USO1W

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838
Sample wt/vol: 950 (g/mL) ML Lab File ID: >I1810
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 10000(uL) Date Analyzed: 05/09/95
Injection Volume: 2.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) N pH: _____.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	1000	U
111-44-4	bis(2-Chloroethyl)ether	1000	U
95-57-8	2-Chlorophenol	1000	U
541-73-1	1,3-Dichlorobenzene	1000	U
106-46-7	1,4-Dichlorobenzene	1000	U
95-50-1	1,2-Dichlorobenzene	1000	U
95-48-7	2-Methylphenol	1000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1000	U
106-44-5	4-Methylphenol	1000	U
621-64-7	N-Nitroso-di-n-propylamine	1000	U
67-72-1	Hexachloroethane	1000	U
98-95-3	Nitrobenzene	1000	U
78-59-1	Isophorone	1000	U
88-75-5	2-Nitrophenol	1000	U
105-67-9	2,4-Dimethylphenol	1000	U
111-91-1	bis(2-Chloroethoxy)methane	1000	U
120-83-2	2,4-Dichlorophenol	1000	U
120-82-1	1,2,4-Trichlorobenzene	1000	U
91-20-3	Naphthalene	5600	
106-47-8	4-Chloroaniline	1000	U
87-68-3	Hexachlorobutadiene	1000	U
59-50-7	4-Chloro-3-methylphenol	1000	U
91-57-6	2-Methylnaphthalene	19000	E
77-47-4	Hexachlorocyclopentadiene	1000	U
88-06-2	2,4,6-Trichlorophenol	1000	U
95-95-4	2,4,5-Trichlorophenol	2600	U
91-58-7	2-Chloronaphthalene	1000	U
88-74-4	2-Nitroaniline	2600	U
131-11-3	Dimethylphthalate	1000	U
606-20-2	2,6-Dinitrotoluene	1000	U
208-96-8	Acenaphthylene	700	J
99-09-2	3-Nitroaniline	2600	U
83-32-9	Acenaphthene	2500	

Respectfully Submitted
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Manager, Environmental Science

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EPA SAMPLE NO.
USO1WDL

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838DL
Sample wt/vol: 950 (g/mL) ML Lab File ID: >I1812
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 10000(uL) Date Analyzed: 05/09/95
Injection Volume: 2.0 (uL) Dilution Factor: 50.0
GPC Cleanup: (Y/N) N pH: _____.

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111-44-4	bis(2-Chloroethyl)ether	5300	U	
95-57-8	2-Chlorophenol	5300	U	
541-73-1	1,3-Dichlorobenzene	5300	U	
106-46-7	1,4-Dichlorobenzene	5300	U	
95-50-1	1,2-Dichlorobenzene	5300	U	
95-48-7	2-Methylphenol	5300	U	
108-60-1	2,2'-oxybis(1-Chloropropane)	5300	U	
106-44-5	4-Methylphenol	5300	U	
621-64-7	N-Nitroso-di-n-propylamine	5300	U	
67-72-1	Hexachloroethane	5300	U	
98-95-3	Nitrobenzene	5300	U	
78-59-1	Isophorone	5300	U	
88-75-5	2-Nitrophenol	5300	U	
105-67-9	2,4-Dimethylphenol	5300	U	
111-91-1	bis(2-Chloroethoxy)methane	5300	U	
120-83-2	2,4-Dichlorophenol	5300	U	
120-82-1	1,2,4-Trichlorobenzene	5300	U	
91-20-3	Naphthalene	5600		D
106-47-8	4-Chloroaniline	5300	U	
87-68-3	Hexachlorobutadiene	5300	U	
59-50-7	4-Chloro-3-methylphenol	5300	U	
91-57-6	2-Methylnaphthalene	28000		D
77-47-4	Hexachlorocyclopentadiene	5300	U	
88-06-2	2,4,6-Trichlorophenol	5300	U	
95-95-4	2,4,5-Trichlorophenol	13000	U	
91-58-7	2-Chloronaphthalene	5300	U	
88-74-4	2-Nitroaniline	13000	U	
131-11-3	Dimethylphthalate	5300	U	
606-20-2	2,6-Dinitrotoluene	5300	U	
208-96-8	Acenaphthylene	5300	U	
99-09-2	3-Nitroaniline	13000	U	
83-32-9	Acenaphthene	2600	J	D

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

See reverse side for explanation of symbols and abbreviations.

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
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umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

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WARRANTY AND LIMITATION OF LIABILITY - In accepting analytical work, we warrant the accuracy of test results for the sample as submitted. We disclaim any other warranties, express or implied, including a Warranty of Fitness for Particular Purpose and Warranty of Merchantability. We accept no responsibility for the purpose for which the client uses the test results. No purchase order or other order for work shall be accepted by the company with any conditions that vary from our Standard Terms and Conditions. If Lancaster Laboratories performs work requested by the client, conditions at variance to our Standard Terms and Conditions are not part of the contract.

Lancaster Laboratories
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
US01W

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838
Sample wt/vol: 950 (g/mL) ML Lab File ID: >I1810
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 10000(uL) Date Analyzed: 05/09/95
Injection Volume: 2.0 (uL) Dilution Factor: 10.0
GPC Cleanup: (Y/N) N pH: _____.

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
51-28-5	2,4-Dinitrophenol	2600	U
100-02-7	4-Nitrophenol	2600	U
132-64-9	Dibenzofuran	880	J
121-14-2	2,4-Dinitrotoluene	1000	U
84-66-2	Diethylphthalate	1000	U
7005-72-3	4-Chlorophenyl-phenylether	1000	U
86-73-7	Fluorene	3400	
100-01-6	4-Nitroaniline	2600	U
534-52-1	4,6-Dinitro-2-methylphenol	2600	U
86-30-6	N-Nitrosodiphenylamine (1)	1000	U
101-55-3	4-Bromophenyl-phenylether	1000	U
118-74-1	Hexachlorobenzene	1000	U
87-86-5	Pentachlorophenol	2600	U
85-01-8	Phenanthrene	7400	
120-12-7	Anthracene	1100	
86-74-8	Carbazole	1000	U
84-74-2	Di-n-butylphthalate	1000	U
206-44-0	Fluoranthene	430	J
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	1000	U
91-94-1	3,3'-Dichlorobenzidine	1000	U
56-55-3	Benzo(a)anthracene	280	J
117-81-7	bis(2-Ethylhexyl)phthalate	1000	U
218-01-9	Chrysene	510	J
117-84-0	Di-n-octylphthalate	1000	U
205-99-2	Benzo(b)fluoranthene	110	J
207-08-9	Benzo(k)fluoranthene	1000	U
50-32-8	Benzo(a)pyrene	230	J
193-39-5	Indeno(1,2,3-cd)pyrene	1000	U
53-70-3	Dibenz(a,h)anthracene	1000	U
191-24-2	Benzo(g,h,i)perylene	1000	U

(1) - Cannot be separated from Diphenylamine

Respectfully Submitted
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Lancaster Laboratories
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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.
USO1WDL

Lab Name: LANCASTER LABS Contract: _____.
Lab Code: LANCAS Case No.: _____. SAS No.: _____. SDG No.: _____.
Matrix: (soil/water) WATER Lab Sample ID: 2306838DL
Sample wt/vol: 950 (g/mL) ML Lab File ID: >I1812
Level: (low/med) LOW Date Received: 05/05/95
% Moisture: _____. decanted: (Y/N) ___. Date Extracted: 05/08/95
Concentrated Extract Volume: 10000(uL) Date Analyzed: 05/09/95
Injection Volume: 2.0 (uL) Dilution Factor: 50.0
GPC Cleanup: (Y/N) N pH: _____.

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7005-72-3	4-Chlorophenyl-phenylether	5300	U
86-73-7	Fluorene	3400	J D
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(1) - Cannot be separated from Diphenylamine

FORM I SV-2 3/90

Respectfully Submitted
Jon S. Kauffman, Ph.D.
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LABORATORY CHRONICLE

LLI Sample No. WW 2306838
Collected: 05/03/95 at 13:40 by CM

Submitted: 05/05/95

566-US-01 Grab Water Sample

NWS Earle CTO-206
US01W SDG#: NWS04-02*

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

CAT NO	ANALYSIS NAME	METHOD	TRIAL	DATE OF ANALYSIS	ANALYST
4275	TCL Volatiles (EPA 3/90 SOW)	SOW OLM01.8 3/90	1	05/10/95	RCR
1743	Aluminum	SOW ILM02.1 3/90	1	05/08/95	RS
1744	Antimony	SOW ILM02.1 3/90	1	05/08/95	RS
1746	Barium	SOW ILM02.1 3/90	1	05/08/95	RS
1747	Beryllium	SOW ILM02.1 3/90	1	05/08/95	RS
1749	Cadmium	SOW ILM02.1 3/90	1	05/08/95	RS
1750	Calcium	SOW ILM02.1 3/90	2	05/10/95	RS
1751	Chromium	SOW ILM02.1 3/90	1	05/08/95	RS
1752	Cobalt	SOW ILM02.1 3/90	1	05/08/95	RS
1753	Copper	SOW ILM02.1 3/90	1	05/08/95	RS
1754	Iron	SOW ILM02.1 3/90	1	05/08/95	RS
1757	Magnesium	SOW ILM02.1 3/90	2	05/10/95	RS
1758	Manganese	SOW ILM02.1 3/90	1	05/08/95	RS
1761	Nickel	SOW ILM02.1 3/90	1	05/08/95	RS
1762	Potassium	SOW ILM02.1 3/90	2	05/10/95	RS
1766	Silver	SOW ILM02.1 3/90	1	05/08/95	RS
1767	Sodium	SOW ILM02.1 3/90	2	05/10/95	RS
1771	Vanadium	SOW ILM02.1 3/90	1	05/08/95	RS
1772	Zinc	SOW ILM02.1 3/90	1	05/08/95	RS
5720	WW CLP ICP Digest	SOW ILM02.1 3/90	1	05/08/95	JG
7022	Thallium TR	SOW ILM02.1 3/90	1	05/08/95	RS
7035	Arsenic TR	SOW ILM02.1 3/90	1	05/08/95	RS
7036	Selenium TR	SOW ILM02.1 3/90	1	05/08/95	RS
7055	Lead TR	SOW ILM02.1 3/90	1	05/10/95	RS
0259	Mercury	SOW ILM02.1 3/90	1	05/11/95	NSM
0821	PW/WW CLP Hg Digest	SOW ILM02.1 3/90	1	05/10/95	NSM
4372	TCL Semi-Volatiles (3/90 SOW)	SOW OLM01.8 3/90	1	05/09/95	BAR
4373	TCL Semi-Volatiles 3/90 (cont)	SOW OLM01.8 3/90	1	05/09/95	BAR
4606	TCL 3/90 Water Extraction	SOW OLM01.8 3/90	1	05/08/95	LJC

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Aut 7558 #2306105-11

#2305988-6001

CHAIN OF CUSTODY RECORD

PROJECT NO.: CTO 206	SITE NAME: NWS Earle
SAMPLERS (SIGNATURE): [illegible] Charles Morgan	

STATION NO.	DATE	TIME	COMP	GRAB	STATION LOCATION	NO. OF CONTAINERS	40 ML VOA HCL TCL Volatiles	125 ML wide Mouth TCL Volatiles	125 ML wide Mouth TCLP V	1000 ML wide Mouth TCLP NV	1 Liter Amber TCLP-F	40 ML VOA No Pres TCL Volatiles	REMARKS
566	5/3/95	0900		✓	566-TB-0503		2						
566	5/3/95	1030		✓	566-SB-1703			2					Do MS/MSD
566	5/3/95	1040		✓	566-SB-1803			1					
566	5/3/95	1055		✓	566-SB-1601			1					
566	5/3/95	1113		✓	566-SB-1502			1					
566	5/3/95	1140		✓	566-SB-1403			1					
566	5/3/95	1220		✓	566-SB-1302			1					
566	5/3/95	1230		✓	566-SB-1202			1					
566	5/3/95	1245		✓	566-SB-1103			1					
566	5/3/95	1302		✓	566-SB-1004			1					
566	5/3/95	1330		✓	566-TCLP-0101				1	2			
566	5/3/95	1410		✓	566-RB-0503		2				1		
566	5/3/95	1430		✓	566-FB-0503		2				1		
566	5/3/95	0900		✓	566-TB-0503NP							2	Bottles Not Preserved

RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):	RELINQUISHED BY (SIGNATURE):	DATE / TIME:	RECEIVED BY (SIGNATURE):
Charles Morgan	5/3/95 1830				
RELINQUISHED BY (SIGNATURE):	**DATE / TIME:**	**RECEIVED BY (SIGNATURE):**	**RELINQUISHED BY (SIGNATURE):**	**DATE / TIME:**	**RECEIVED BY (SIGNATURE):**
RELINQUISHED BY (SIGNATURE):	**DATE / TIME:**	**RECEIVED FOR LABORATORY BY (SIGNATURE):**	**DATE / TIME:**	**REMARKS:** Shipped via Federal Express Airbill No 2505133245	
		[illegible]	5-4-95 0915		

Order No. 70440 (0693)

Lancaster Laboratories
Where quality is a science.

LLI Sample No. TL 2306108
Collected: 5/ 3/95 at 13:30 by CM

Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

566-TCLP-0101 Grab Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
NWS Earle CTO-206
101ZH SDG#: NWS03-04

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
0948	TCLP Volatiles		5.0	See Page 2

1 COPY TO Halliburton NUS ATTN: Ms. Jill Hartnell
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300
03:59:29 D 0002 7 121123 464631
925 300.00 00030000 ASR000

Respectfully Submitted
Ramona V. Layman, Group Leader
ICP Metals/Leachates

MEMBER ACIL
Lancaster Laboratories, Inc.
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C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

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> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

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X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
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*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories
Where quality is a science.

LLI Sample No. TL 2306108
Collected: 5/ 3/95 at 13:30 by CM

Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

566-TCLP-0101 Grab Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
NWS Earle CTO-206
101ZH SDG#: NWS03-04

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
TCLP Volatiles				
3492	Vinyl Chloride	N.D.	0.050	mg/l
3500	1,1-Dichloroethene	N.D.	0.025	mg/l
3503	Chloroform	N.D.	0.025	mg/l
3504	1,2-Dichloroethane	N.D.	0.025	mg/l
0316	2-Butanone	N.D.	0.50	mg/l
3506	Carbon Tetrachloride	N.D.	0.025	mg/l
3511	Trichloroethene	N.D.	0.025	mg/l
3515	Benzene	N.D.	0.025	mg/l
3522	Tetrachloroethene	N.D.	0.025	mg/l
3525	Chlorobenzene	N.D.	0.025	mg/l

The volatile organic analyses were performed on a zero headspace toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the volatile concentrations (mg/l) in the leachate exceed the following maxima:

Benzene	0.5	1,1-Dichloroethene	0.7
Carbon Tetrachloride	0.5	Methyl Ethyl Ketone (2-Butanone)	200.0
Chlorobenzene	100.0	Tetrachloroethene	0.7
Chloroform	6.0	Trichloroethene	0.5
1,2-Dichloroethane	0.5	Vinyl Chloride	0.2

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300

Respectfully Submitted
Michele McClarin, B.A.
Group Leader, GC/MS Volatiles

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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LABORATORY CHRONICLE

LLI Sample No. TL 2306108
Collected: 05/03/95 at 13:30 by CM

Submitted: 05/04/95

566-TCLP-0101 Grab Soil Sample
TCLP ZERO HEADSPACE EXTRACTION
NWS Earle CTO-206
101ZH SDG#: NWS03-04

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

CAT NO	ANALYSIS NAME	METHOD	TRIAL	DATE OF ANALYSIS	ANALYST
0948	TCLP Volatiles	SW-846 8240A	1	05/10/95	DPC
0946	TCLP Zero Headspace Extraction	SW-846 1311	1	05/08/95	DAB

MEMBER ACIL

Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

See reverse side for explanation of symbols and abbreviations.

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LLI Sample No. TL 2306105
Collected: 5/ 3/95 at 13:30 by CM

Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

566-TCLP-0101 Grab Soil Sample
TCLP NON VOLATILE EXTRACTION
NWS Earle CTO-206
-0101 SDG#: NWS03-01

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS	
1335	Arsenic	N.D.	0.10	mg/l	
1336	Selenium	N.D.	0.20	mg/l	
1746	Barium	0.18	0.10	mg/l	
1749	Cadmium	0.0028 J	0.010	mg/l	
1751	Chromium	N.D.	0.030	mg/l	
1755	Lead	N.D.	0.10	mg/l	
1766	Silver	N.D.	0.020	mg/l	
0259	Mercury	0.000043J	0.00020	mg/l	
0950	TCLP Pesticides		1.	See Page	2
0952	TCLP Herbicides		0.1	See Page	3
0949	TCLP Acid Base/Neutrals			See Page	4

MCL's FOR TCLP Metals

BARIUM	100 mg/l
CADMIUM	1.0 mg/l
MERCURY	0.2 mg/l

1 COPY TO Halliburton NUS ATTN: Ms. Jill Hartnell
1 COPY TO Data Package Group

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300
03:57:30 D 0002 7 121123 464631
925 730.26 00074951 ASR000

Respectfully Submitted
Ramona V. Layman, Group Leader
ICP Metals/Leachates

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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Lancaster Laboratories
Where quality is a science.

LLI Sample No. TL 2306105
Collected: 5/ 3/95 at 13:30 by CM

Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

566-TCLP-0101 Grab Soil Sample
TCLP NON VOLATILE EXTRACTION
NWS Earle CTO-206
-0101 SDG#: NWS03-01

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
TCLP Pesticides				
1977	Chlordane	N.D.	0.005	mg/l
1976	Endrin	N.D.	0.001	mg/l
1973	Heptachlor	N.D.	0.001	mg/l
1974	Heptachlor Epoxide	N.D.	0.001	mg/l
1972	Gamma BHC - Lindane	N.D.	0.001	mg/l
1975	Methoxychlor	N.D.	0.02	mg/l
1978	Toxaphene	N.D.	0.05	mg/l

The pesticide/herbicide analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the contaminant concentrations (mg/l) in the leachate exceed the following maxima:

Chlordane	0.03	Methoxychlor	10.0
Endrin	0.02	Toxaphene	0.5
Heptachlor (and epoxide)	0.008	2,4-D	10.0
Lindane	0.4	2,4,5-TP(Silvex)	1.0

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300

Respectfully Submitted
Jenifer E. Hess, B.S.
Group Leader Pesticides/PCBs

MEMBER ACIL
Lancaster Laboratories, Inc.
2425 New Holland Pike
PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

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Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

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P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
TCLP Herbicides				
1979	2,4-D	N.D.	0.1	mg/l
1980	2,4,5-TP	N.D.	0.1	mg/l

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300

Respectfully Submitted
Jenifer E. Hess, B.S.
Group Leader Pesticides/PCBs

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Submitted: 5/ 4/95 Reported: 5/19/95
Discard: 7/19/95

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NWS Earle CTO-206
-0101 SDG#: NWS03-01

Account No: 07558
Halliburton NUS
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993 Old Eagle Sch. Rd. Ste 415
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P.O. GCPP-93-104J-1298
Rel. TA#10-206

CAT NO.	ANALYSIS NAME	AS RECEIVED RESULTS	LIMIT OF QUANTITATION	UNITS
TCLP Acid Base/Neutrals				
3324	pyridine	N.D.	0.020	mg/l
3325	1,4-dichlorobenzene	N.D.	0.020	mg/l
3326	2-methylphenol	N.D.	0.020	mg/l
3327	3 and 4-methylphenol	N.D.	0.020	mg/l
3328	hexachloroethane	N.D.	0.020	mg/l
3329	nitrobenzene	N.D.	0.020	mg/l
3330	hexachlorobutadiene	N.D.	0.020	mg/l
3331	2,4,6-trichlorophenol	N.D.	0.020	mg/l
3332	2,4,5-trichlorophenol	N.D.	0.020	mg/l
3333	2,4-dinitrotoluene	N.D.	0.020	mg/l
3334	hexachlorobenzene	N.D.	0.020	mg/l
3335	pentachlorophenol	N.D.	0.050	mg/l

The semivolatile analyses were performed on a non-volatile toxicity characteristic leachate of the submitted waste. The leachate was prepared according to the procedure specified in the March 29 and the June 29, 1990 Federal Registers.
A sample is considered to have failed the Toxicity Characteristic (TC) test and is therefore considered a hazardous waste if any of the semivolatile concentrations (mg/l) in the leachate exceed the following maxima:

Total Methylphenols	200.0	Nitrobenzene	2.0
1,4-Dichlorobenzene	7.5	Pentachlorophenol	100.0
2,4-Dinitrotoluene	0.13	Pyridine	5.0
Hexachlorobenzene	0.13	2,4,5-Trichlorophenol	400.0
Hexachlorobutadiene	0.5	2,4,6-Trichlorophenol	2.0
Hexachloroethane	3.0		

The limits are published in March 29, 1990 Federal Register, pp. 11845-6.

Questions? Contact your Client Services Representative
Katherine A. Klinefelter at (717) 656-2300

Respectfully Submitted
Jon S. Kauffman, Ph.D.
Manager, Environmental Science

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PO Box 12425
Lancaster, PA 17605-2425
717-656-2301 Fax: 717-656-2681

Explanation of Symbols and Abbreviations

The following defines common symbols and abbreviations used in reporting technical data:

N.D.	none detected	**BMQL**	Below Minimum Quantitation Level
TNTC	Too Numerous To Count	**MPN**	Most Probable Number
IU	International Units	**CP Units**	cobalt-chloroplatinate units
umhos/cm	micromhos/cm	**NTU**	nephelometric turbidity units
C	degrees Celsius	**F**	degrees Fahrenheit
Cal	(diet) calories	**lb.**	pound(s)
meq	milliequivalents	**kg**	kilogram(s)
g	gram(s)	**mg**	milligram(s)
ug	microgram(s)	**l**	liter(s)
ml	milliliter(s)	**ul**	microliter(s)
m3	cubic meter(s)	**fib > 5 um/ml**	fibers greater than 5 microns in length per ml

< less than - The number following the sign is the limit of quantitation, the smallest amount of analyte which can be reliably determined using this specific test.

> greater than

ppm parts per million - One ppm is equivalent to one milligram per kilogram (mg/kg), or one gram per million grams. For aqueous liquids, ppm is usually taken to be equivalent to milligrams per liter (mg/l), because one liter of water has a weight very close to a kilogram. For gases or vapors, one ppm is equivalent to one microliter of gas per liter of gas.

ppb parts per billion

Dry weight basis Results printed under this heading have been adjusted for moisture content. This increases the analyte concentration to approximate the value present in a similar sample without moisture.

U.S. EPA data qualifiers:

Organic Qualifiers

A	TIC is a possible aldol-condensation product
B	Analyte was also detected in the blank
C	Pesticide result confirmed by GC/MS
D	Compound quantitated on a diluted sample
E	Concentration exceeds the calibration range of the instrument
J	Estimated value
N	Presumptive evidence of a compound (TIC's only)
P	Concentration difference between primary and confirmation columns >25%
U	Compound was not detected
X,Y,Z	Defined in case narrative

Inorganic Qualifiers

B	Value is <CRDL, but ≥IDL
E	Estimated due to interference
M	Duplicate injection precision not met
N	Spike sample not within control limits
S	Method of standard additions (MSA) used for calculation
U	Compound was not detected
W	Post digestion spike out of control limits
*****	Duplicate analysis not within control limits
+	Correlation coefficient for MSA <0.995

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Lancaster Laboratories
Where quality is a science.

LABORATORY CHRONICLE

LLI Sample No. TL 2306105
Collected: 05/03/95 at 13:30 by CM

Submitted: 05/04/95

Account No: 07558
Halliburton NUS
Brown & Root Environmental
993 Old Eagle Sch. Rd. Ste 415
Wayne PA 19087-1710

566-TCLP-0101 Grab Soil Sample
TCLP NON VOLATILE EXTRACTION
NWS Earle CTO-206
-0101 SDG#: NWS03-01

CAT NO	ANALYSIS NAME	METHOD	TRIAL	DATE OF ANALYSIS	ANALYST
1335	Arsenic	SW-846 6010A	1	05/10/95	DRS
1336	Selenium	SW-846 6010A	1	05/10/95	DRS
1746	Barium	SW-846 6010A	1	05/10/95	DRS
1749	Cadmium	SW-846 6010A	1	05/10/95	DRS
1751	Chromium	SW-846 6010A	1	05/10/95	DRS
1755	Lead	SW-846 6010A	1	05/10/95	DRS
1766	Silver	SW-846 6010A	1	05/10/95	DRS
5705	WW/TCLP ICP Digest	SW-846 3010A	1	05/09/95	MDK
0259	Mercury	SW-846 7470	1	05/10/95	NSM
5713	WW SW846 Hg Digest	SW-846 7470	1	05/09/95	NSM
0816	Water Sample Prep - Herbicide	SW-846 8150A	2	05/15/95	JSF
0817	Water Extraction - Pesticides	SW-846 3510A	1	05/11/95	BSC
0950	TCLP Pesticides	SW-846 8080	1	05/13/95	GJF
0952	TCLP Herbicides	SW-846 8150A	1	05/16/95	GJF
0949	TCLP Acid Base/Neutrals	SW-846 8270A	1	05/10/95	PRE
4731	TCLP Leachate Extraction	SW-846 3510A	1	05/09/95	JSC
0947	TCLP Non-volatile Extraction	SW-846 1311	1	05/08/95	CLB

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